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The democratisation of international taxation: stemming aggressive tax practices for economic development

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Abstract

On 22 November 2023, the groundwork was laid for a new United Nations (UN) Tax Convention, paving the way for a shift in leadership in international tax policy away from the OECD and towards a democratised approach that would give developing nations a greater voice in addressing aggressive tax practices and profit shifting. The move will also likely lead to a greater emphasis on sustainable development goals, which have the largest impact on the Global South, where strategies are needed to improve health and education, reduce inequality, and spur economic growth. Concurrently, it is well documented that a significant form of revenue for developing nations is taxation. However, the collection is generally lower than in developed nations. Further, increasing revenue from the corporate income tax base is the most realistic approach to aid economic development through the tax system. Aggressive tax practices are one cause of low corporate tax revenue collection. This article considers the most common practices multinational entities (MNE) use to shift profits to low- or no-tax jurisdictions. Noting that transfer pricing is a fundamental source of profit shifting, the article discusses the benefits of an alternative model known as global formulary apportionment. In doing so, the advantages of its adoption for developing nations are discussed. The article then undertakes an empirical analysis using publicly available data contained in country-by-country reports to determine the effects of a formulary apportionment model on developing nations. The study specifically investigates the potential increases or decreases in revenue collected using different apportionment formulas. Data contained in publicly available country-by-country reports are relied upon to estimate the likely revenue effects of these different formulas. The article also demonstrates the likely simplification of such a model and its ability to stem aggressive tax practices such as transfer pricing and thin capitalisation. The article concludes that the UN Tax Convention should propose a global formulary apportionment model for the allocation of profits between jurisdictions. However, it cautions against the use of a formula that fails to adequately take into account the contributions to profits of MNEs that occur through genuine economic activity in developing countries.

Keywords: corporate taxation, formulary apportionment, profit shifting, developing nations

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1. INTRODUCTION

In recent decades, the Organisation for Economic Co-operation and Development (OECD) has been seen as the leading global body tasked to design a cohesive international tax regime. In particular, since 2013, it has led a program of international tax reform to address base erosion and profit shifting (BEPS). However, since the inception of the BEPS program of reform, there has been discontent among a broader group of nations that view the OECD as a developed nations club that focuses on its own interests. Despite such initiatives as the OECD Inclusive Framework,[1] which is designed to include any nation that wishes to join, dissatisfaction with OECD reforms remains. Frustration with a lack of progress in stemming aggressive tax practices by multinational entities, combined with an ongoing view that any reforms that have been implemented benefit developed nations to a greater extent than the Global South, led to action at the United Nations.

On 22 November 2023, the groundwork was laid for a new United Nations Tax Convention, paving the way for a shift in leadership in international tax policy away from the OECD and towards a democratised approach that would give developing nations a greater voice.[2] On that date, the UN General Assembly adopted a resolution to begin the process of establishing a framework tax convention. It is suggested that the move will likely lead to a greater emphasis on sustainable development goals, which have the largest impact on the Global South,[3] where strategies are needed to improve health and education, reduce inequality, and spur economic growth.

A fundamental objective of the proposed UN Tax Convention is to establish an 'inclusive, fair, transparent, efficient, equitable, and effective international tax system for sustainable development, with a view to enhancing the legitimacy, certainty, resilience, and fairness of international tax rules'.[4] It is well documented that a significant form of revenue for developing nations is taxation and that the collection is generally lower than in developed nations.[5] Further, increasing revenue from the corporate income tax base is the most realistic approach to aid economic development through the tax system. As evidenced by the BEPS program of reform, aggressive tax

[1] OECD, 'Base Erosion and Profit Shifting (BEPS)', <https://www.oecd.org/en/topics/policy-issues/base-erosion-and-profit-shifting-beps.html>.

[2] United Nations, *Promotion of Inclusive and Effective International Tax Cooperation at the United Nations*, GA Res 78/230, UN Doc A/C.2/78/L.18/Rev.1 (Revised Draft, 15 November 2023); Final Resolution: United Nations, *Promotion of Inclusive and Effective International Tax Cooperation at the United Nations*, A/Res/78/230 (Final Resolution, Adopted on 22 December 2023) ('*Promotion of Inclusive and Effective International Tax Cooperation*') <https://financing.desa.un.org/sites/default/files/2024-01/A.RES_.78.230_English.pdf>.

[3] The Global South broadly comprises Africa, Latin America and the Caribbean, Asia (excluding Israel, Japan, and South Korea) and Oceania (excluding Australia and New Zealand).

[4] United Nations, *Chair's Proposal for Draft Terms of Reference for a United Nations Framework Convention on International Tax Cooperation*, UN Doc A/AC.295/2024/L.4 (adopted by the Ad Hoc Committee to Draft Terms of Reference for a United Nations Framework Convention on International Tax Cooperation, 16 August 2024).

[5] See, for example, International Monetary Fund (IMF), *Corporate Taxation in the Global Economy* (2019); United Nations Conference on Trade and Development (UNCTAD), *Economic Development in Africa Report 2020: Tackling Illicit Financial Flows for Sustainable Development in Africa* (2020); Tax Justice Network, *State of Tax Justice 2023* (2023); Antonio Cascais, 'Chasing Africa's Tax Dodgers', *Deutsche Welle* (17 June 2021) <https://www.dw.com/en/africas-problem-with-tax-avoidance/a-48401574> (accessed 10 January 2025).

practices are a significant cause of low corporate tax revenue collection.[6] In particular, the practices of transfer pricing and excessive debt loading (thin capitalisation) are major causes of profit shifting from the true location of economic activity, often where that activity is in developing countries.

This article considers whether the UN Tax Convention proposal should include a formulary apportionment model for profit allocation of multinational entities (MNEs) by empirically testing the effects of this alternative model on developing nations. It does so to investigate the potential increases or decreases in revenue collected using different apportionment formulas. Data contained in publicly available country-by-country reports (CbCRs) are relied upon to estimate the likely revenue effects of these different formulas. The article also demonstrates the likely simplification of such a model and its ability to stem aggressive tax practices such as transfer pricing and thin capitalisation. In doing so, it first adds to the literature on the suitability of a global formulary apportionment approach for developing nations. Second, it builds on prior empirical studies that attempt to quantify the effects of global formulary apportionment on tax revenues at country level and arguably provides methodological improvements due to recently available data.

Following this introduction, section 2 of this article discusses the potential role of the UN tackling aggressive tax practices and ensuring developing countries are not net losers in any reform. Section 3 then highlights the most common practices of MNEs that enable these aggressive tax practices to continue, while section 4 provides an alternative model known as global formulary apportionment. Taking into account the required design elements of a formulary apportionment model, section 5 provides a discussion of the aspects that would need to be developed for a UN Model Tax Convention. Noting that global formulary apportionment is arguably a theoretically superior model, section 6 investigates through an empirical study, whether developing countries would be net winners under such a model and what formula is likely to produce such an outcome. Finally, in section 7, the article concludes that the UN Tax Convention should propose a global formulary apportionment model for the allocation of profits between jurisdictions. However, it cautions against the use of a formula that fails to adequately take into account the contributions to profits of MNEs that occur through genuine economic activity in developing countries.

2. THE ROLE OF THE UNITED NATIONS IN DEVELOPING AN INCLUSIVE TAX MODEL

For nearly a century, the design of international tax policy has been dominated by powerful developed countries through the international body known as the OECD.[7] After the Second World War, a more inclusive international body, the UN, attempted to set international tax rules suitable for all member states.[8] However, initiatives failed in 1954 when the UN discontinued its fiscal committee, leaving the role of developing international tax policy to the OECD.[9] The resulting design of the regime was one that

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6 OECD, BEPS Actions, BEPS 2015 Final Reports, <https://www.oecd.org/tax/beps/beps-actions/>.

7 Peter Dietsch and Thomas Rixen, 'Global Tax Governance: What It Is and Why It Matters' in Peter Dietsch and Thomas Rixen (eds), *Global Tax Governance: What Is Wrong with It and How to Fix It* (ECPR Press, 2016) 1.

8 Sunita Jogarajan, *Double Taxation and the League of Nations* (Cambridge University Press, 2018).

9 Wouter van de Klippe, 'The Global South Is Fighting for a Voice in Global Tax Rules', *Center for International Policy* (28 February 2024) <https://internationalpolicy.org/publications/the-global-south-is-fighting-for-a-voice-in-global-tax-rules/> (accessed 11 January 2025).

represented the interests of OECD members, a small group of wealthy nations that excluded a large part of the global community.[10] While discontent was evident among developing countries and partially addressed by the OECD with its more recent Inclusive Framework, the lack of genuine reform to address aggressive tax practices by MNEs ultimately led to frustrations and calls for action to be undertaken at the UN.[11] It has been suggested that after a decade of OECD work on its BEPS agenda, the package falls well short of establishing effective and fair solutions for all countries, especially developing nations.[12] As a result, in 2023, the UN once more formalised its position on the design of an international tax system that represents all members. This process, which began with the UN tax resolution, sent a clear message to the world – developing countries would no longer play an ancillary role in the design of a global tax regime fit for the 21st century.

The UN tax resolution, entitled 'Promotion of Inclusive and Effective International Tax Cooperation at the United Nations', led by Nigeria, received support from 125 countries, with 48 countries opposing the resolution and a further nine countries abstaining from voting.[13] The latter two categories were predominantly comprised of OECD member countries such as Australia, Canada, the United States, the United Kingdom, and European Union members. These countries made it clear that maintaining the status quo was the preferred option.[14] Figures suggest that those who voted against the resolution are responsible for three-quarters of all countries' losses to tax havens yet represent only 15 per cent of the global population, in contrast to those countries that voted in favour of the resolution, which represent 80 per cent.[15]

At the outset, the UN tax resolution recognised the importance of ensuring the international tax regime is 'fully inclusive and more effective, both in procedural and substantive terms'.[16] It did so in the context of the 'corrosive effect that aggressive tax avoidance and tax evasion have on trust, the social compact, financial integrity, the rule of law and sustainable development, affecting the poorest and most vulnerable'.[17] The aim of the resolution is to ultimately develop a UN framework convention on international cooperation to achieve the goal of a fully inclusive and more effective international tax regime that helps to achieve the 2030 Agenda for Sustainable

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[10] Linda Brosens and Jasper Bossuyt, 'Legitimacy in International Tax Law-Making: Can the OECD Remain the Guardian of Open Tax Norms?' (2020) 12(2) *World Tax Journal* 313, 362.
[11] Afton Titus, 'The Role of the United Nations in Ensuring Equitable Tax Policies for Developing Countries' (2025) *Journal of International Economic Law* (advance).
[12] Sol Picciotto, Muhammad Ashfaq Ahmed, Alex Cobham, Rasmi Ranjan Das, Emmanuel Eze and Bob Michel, *Beyond the Two Pillar Proposals: A Simplified Approach for Taxing Multinationals*, South Centre Tax Cooperation Policy Brief No 36 (26 October 2023) 2.
[13] United Nations, 'Second Committee Approves Nine Draft Resolutions, Including Texts on International Tax Cooperation, External Debt, Global Climate, Poverty Eradication' (Meetings Coverage, 22 November 2023) <https://press.un.org/en/2023/gaef3597.doc.htm>.
[14] See, for example, a discussion on Australia's approach: Kerrie Sadiq and Richard Krever, 'Why Is Australia Helping to Block a Move to Tax Multinational Corporations Properly?', *The Conversation* (8 April 2024) <https://theconversation.com/why-is-australia-helping-to-block-a-move-to-tax-multinational-corporations-properly-219305>.
[15] Mark Bou Mansour, '"No" Voters on UN Tax Reform Enable 75% of Global Tax Abuse', *Tax Justice Network* (23 November 2023) <https://taxjustice.net/press/no-voters-on-un-tax-reform-enable-75-of-global-tax-abuse/>.
[16] United Nations, *Promotion of Inclusive and Effective International Tax Cooperation*, above n 2, 1.
[17] Ibid.

Development and its 17 goals,[18] ensuring a balance of the three dimensions of sustainable development: the economic, social and environmental.[19]

In a significant step forward, on 16 August 2024, the ad hoc committee to draft terms of reference for a UN framework convention on international tax cooperation concluded its second session by approving a proposal containing those draft terms.[20] Again, the vote in favour of the terms of reference, totalling 110, was largely made up of developing nations, with 44 nations abstaining and eight voting against it, including Australia, Canada, Israel, Japan, New Zealand, the Republic of Korea, United Kingdom, and the United States.[21] The document entitled 'Chair's Proposal for Draft Terms of Reference for a United Nations Framework Convention on International Tax Cooperation',[22] establishes a robust framework for the objectives, principles, commitments, and capacity-building considerations for the framework convention. In line with a democratised approach, the terms of reference propose that, in setting the objectives, the framework should:

> 'a. Establish fully inclusive and effective international tax cooperation in terms of substance and process;
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> b. Establish a system of governance for international tax cooperation capable of responding to existing and future tax and tax-related challenges on an ongoing basis;
>
> c. Establish an inclusive, fair, transparent, efficient, equitable, and effective international tax system for sustainable development, with a view to enhancing the legitimacy, certainty, resilience, and fairness of international tax rules, while addressing challenges to strengthening domestic resource mobilization'.[23]

The terms of reference also provide that commitments to achieve these objectives include the fair allocation of taxing rights, including equitable taxation of MNEs, and international tax cooperation approaches that will contribute to the balanced and integrated achievement of sustainable development in its three dimensions: economic, social, and environmental.[24] In doing so, the terms of reference make explicit reference to the overarching objectives of the 17 Sustainable Development Goals.

On 27 November 2024, the 2nd Committee of the UN General Assembly passed a resolution that included the adoption of the Terms of Reference for a new Framework Convention on International Tax Cooperation and two early protocols. A similar pattern to previous voting ensued with 125 Member States voting in favour, 46 abstaining, and

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[18] Ibid 4.

[19] United Nations, 'Transforming Our World: The 2030 Agenda for Sustainable Development', <https://sdgs.un.org/2030agenda>.

[20] Eileen Travers, 'Why the World Needs a UN Global Tax Convention', *UN News* (16 August 2024), <https://news.un.org/en/story/2024/08/1153301>.

[21] Ibid.

[22] United Nations, *Chair's Proposal for Draft Terms of Reference for a United Nations Framework Convention on International Tax Cooperation*, UN Doc A/AC.295/2024/L.4 (adopted by the Ad Hoc Committee to Draft Terms of Reference for a United Nations Framework Convention on International Tax Cooperation, 16 August 2024).

[23] Ibid 2.

[24] Ibid 3.

9 voting against it.[25] UN Member States will begin negotiating the text of the UN Tax Convention and the two early protocols in February 2025.[26] Negotiations will be ongoing with three substantive sessions per year conducted by 'an open-ended intergovernmental negotiating committee engaging all Member States'.[27] It is unknown exactly what the UN tax convention will contain and what the models of international taxation will look like. However, the cohesive and inclusive nature of the work done to date suggests that meaningful changes are likely to be on the agenda.[28] The UN itself has made it clear that it wishes to become the global leader in tax reform to represent the majority of nations and the world's population.[29] It has done so in the context of taxing MNEs to ensure they pay their fair share and that additional revenues are collected by poorer countries.

The UN, in its endeavours to redesign the international tax system has stated that its 'global tax convention aims to ensure that large multinationals pay their fair share of taxes, regardless of where they operate, and is expected to generate significant additional tax revenues for many countries, especially those in the Global South'.[30] This new convention is likely to represent an historic and major shift in the approach to international tax.[31] The overarching objective will be to succeed where the OECD's BEPS program of reform has failed. This means addressing the fundamental flaws in the current regime and introducing a system that works for all and is fit for the 21st century. The question then becomes one of what this new regime should look like to achieve such goals. In the next section of this article, the current aggressive tax planning strategies adopted by MNEs are outlined to demonstrate the flaws in the current regime that need to be overcome.

3. Current aggressive tax strategies

There is no doubt that significant global tax revenues are lost to aggressive tax planning strategies adopted by MNEs leading to base erosion and profit shifting. The Tax Justice Network estimates that USD 480 billion is lost each year because of global tax evasion.[32] Similarly, Cobham and Janský estimate the scale of global base erosion and profit shifting to be approximately USD 500 billion,[33] while Crivelli and co-authors estimate the loss to be approximately USD 650 billion.[34] Tax Justice Network findings indicate that approximately USD 47 billion per year, or 10 per cent, is attributed to lower-income countries. In numerical terms, this number is significantly smaller than the global losses of more developed nations. However, proportionally, losses by lower-income countries

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[25] United Nations, 'Concluding Its Session, Second Committee Approves 4 Resolutions, 2 Decisions, including Texts on Tax Cooperation, Affordable Energy Access' (Meetings Coverage, 27 November 2024) <https://press.un.org/en/2024/gaef3614.doc.htm>.
[26] United Nations, 'Intergovernmental Negotiations for UN Framework Convention on International Tax Cooperation', <https://financing.desa.un.org/ru/node/6356>.
[27] Ibid.
[28] Van de Klippe, above n 9.
[29] United Nations, 'Why the World Needs a UN Global Tax Convention' (16 August 2024) <https://www.un.org/en/desa/why-world-needs-un-global-tax-convention>.
[30] Travers, above n 20.
[31] United Nations, 'Why the World Needs a UN Global Tax Convention', above n 29.
[32] Tax Justice Network, *State of Tax Justice 2023*, above n 5.
[33] Alex Cobham and Petr Janský, 'Global Distribution of Revenue Loss from Corporate Tax Avoidance: Re-Estimation and Country Results' (2018) 30(2) *Journal of International Development* 206.
[34] Ernesto Crivelli, Ruud De Mooij and Michael Keen, 'Base Erosion, Profit Shifting and Developing Countries' (2016) 72(3) *FinanzArchiv* 268.

represent almost half of their annual public health budgets.[35] Consistent with these findings, Crivelli and co-authors identified non-OECD countries as the biggest losers, with Cobham and Janský suggesting a significant gap between developed and developing economies due to revenue losses being a higher percentage of GDP for lower income nations. For African countries, the loss through tax abuse is greater than the total amount of foreign development aid they receive annually.[36]

Low-income countries are being depleted of tax revenues and are especially exposed to the profit shifting strategies used by MNEs as well as tax competition between jurisdictions. These same countries have limited capacity to address these issues, especially when coupled with increased complexity in implementing and administering OECD reform proposals such as the global minimum tax.[37] A common narrative around the tax evasion affecting lower-income income countries is that poor administrative infrastructure facilitates corruption and fails to address tax evasion and illicit financial flows.[38] This suggests that fault lies with those countries and their lack of ability to stem the flow of taxable profits out of their jurisdictional reach, rather than inherent flaws in the international tax regime as a whole. There is little doubt that many developing countries have inadequate administrative regimes and corruption. However, as evidenced by the OECD work on aggressive tax practices, there are flaws with the design of the global regime for allocating profits to jurisdictions where genuine activity occurs, and profits are generated. By far the most significant issue is the treatment of MNEs, for tax purposes, as if they are made of separate entities rather than a single global unit. By treating an MNE as having separate parts for tax purposes, profits are able to be shifted from one jurisdiction to another through aggressive tax strategies and highly artificial means.

The current international tax regime for allocating profits to domestic jurisdictions for corporate income tax purposes, which has existed for more than a century, is known as the transfer pricing regime, which contains the arm's length requirement for valuing internal transactions. Profits of MNEs are allocated to jurisdictions using what is known as the separate accounting methodology, which treats each MNE subsidiary or branch as a separate unrelated entity for tax purposes.[39] This is contrary to how an MNE operates in practice, where it is viewed as a global entity and one which aims to maximise global profits rather than jurisdiction-specific returns.[40] Because each part of the MNE is treated as a separate entity for tax purposes, cross-border transactions within the MNE need to be recognised and valued. Both double tax agreements[41] and domestic regimes[42] adopt transfer pricing rules that require these transactions to be valued using an arm's length price, determined as if the parts of the MNE are dealing with each other as unrelated third parties on normal commercial terms. Generally, the price is based on

[35] Tax Justice Network, *State of Tax Justice 2023*, above n 5, 13.
[36] Cascais, above n 5.
[37] IMF, above n 5.
[38] Van de Klippe, above n 9.
[39] Rhoda Brown and Lynne Oats, 'Accounting Profits, Tax Profits and Unitary Taxation (Revisited)' [2020] (1) *British Tax Review* 63.
[40] RH Coase, 'The Nature of the Firm' (1937) 4(16) *Economica* 386.
[41] See Article 9 of the OECD Model Tax Convention on Income and on Capital and the OECD Transfer Pricing Guidelines: OECD, *Model Tax Convention on Income and on Capital 2017* (OECD Publishing, 2012) art 9; OECD, *OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations* (OECD Publishing, 2010).
[42] Referred to as 'Transfer Pricing Regimes'.

market values of comparable supplies of goods and services between unrelated entities.[43]

Over the last century, four significant issues have arisen in the application of the arm's length pricing requirement of transfer pricing regimes. First and foremost, the current system was designed in the early 20th century at a time when physical presence was a key feature of MNEs. These businesses expanded from their home country into foreign jurisdictions by physically establishing an office, factory, building site, etc, with capital investment in the jurisdiction, along with the employment of staff and often sales at that location. Many of these MNEs were horizontally integrated with the same functions undertaken in each jurisdiction. However, as time passed, MNEs tended to adopt a vertical business model that has become increasingly integrated, where separate entities across multiple jurisdictions performed different functions, depending on where it was cost-effective to do so. The tax system has simply not been able to keep pace with the development of global business.[44] Developing countries provided cheap labour and often, large markets. This initially introduced complexities into the transfer pricing regime as often it was difficult to value the transactions between vertical parts of the entity. More recently, this issue was compounded by modern business practices where a physical presence is no longer necessary.

A second challenge to the current international tax regime is the difficulty of valuing internal transactions, especially those that involve intangible assets and the provision of services such as marketing and advertising.[45] A determination of an arm's length price is one based on comparable transactions and requires an analysis of the functions, assets, and risk of the transaction, which, in practice, is highly complex and costly and places constraints on developing nations.[46] For developing nations, it is often extremely difficult to determine a comparable price and therefore, while it is argued that the OECD Guidelines are followed, resort is had to methods that are administratively simpler.[47] Compounding the problem is the fact that intangible assets are often held in low- or no-tax jurisdictions simply for the purposes of tax planning, with entities in other jurisdictions being charged for their use. Yet, it is impossible to value highly specific intangible assets such as branding logos that are held by MNEs.

Services provided by hubs in foreign jurisdictions established in low-tax jurisdictions and specifically designed to provide support activities are also difficult to value. The arm's length price of these types of transactions has been the source of protracted disputes with tax authorities around the world and creates a disproportional burden in loss of tax revenues and administrative compliance on developing nations. Often, developing countries have neither the skills nor resources to apply the checks required under the OECD transfer pricing approach.[48] As Singh states:

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[43] Amir Pichhadze, 'Transfer Pricing and the Arm's Length Principle After BEPS' (Book Review) [2020] (2) *British Tax Review* 241.
[44] Reuven S Avi-Yonah, 'Globalization, Tax Competition, and the Fiscal Crisis of the Welfare State' (2000) 113(7) *Harvard Law Review* 1573.
[45] Kimberly A Clausing, 'The Effect of Profit Shifting on the Corporate Tax Base in the United States and Beyond' (2016) 69(4) *National Tax Journal* 905.
[46] Vinay Kumar Singh, *Interaction of Transfer Pricing and Profit Attribution: Conceptual and Policy Issues for Developing Countries*, South Centre Tax Cooperation Policy Brief No 3 (August 2018).
[47] Sol Picciotto, 'Is the International Tax System Fit for Purpose, Especially for Developing Countries?' (International Centre for Tax and Development Working Paper 13, September 2013) 24.
[48] Picciotto, above n 47.

> The complexities of FAR- [Functions Performed, Assets Deployed and Risks Assumed] based TP [transfer pricing] and its inherent inability to objectively allocate profits among related parties is one of its most significant limitations from the perspective of developing countries, since it can create potential avenues for subjective application by taxpayers and tax authorities according to their respective objectives of tax minimization and tax maximization, leading to frequent disputes and tax litigation.[49]

The digitalisation of the economy poses a third challenge to the current international tax regime and has been a driving force in many of the global tax reforms over the last decade.[50] No longer is an MNE's physical presence in the form of an office, a factory or a shopfront, in a specific jurisdiction necessary to generate profits. Rather, it is the consumers who are in the jurisdiction that are driving the MNE's sales and therefore revenue. The lack of need for a physical presence leads to the fourth significant challenge to the current international tax regime, being a disconnect between the jurisdiction where the profits of an MNE are recognised for tax purposes and where the activities that generate those profits are located. The OECD recognises this problem which it refers to as the location of the economic activity or the real source of income, which is where activities such as sales take place, where the risk is assumed, and where value, for example, though manufacturing, is added.

While transfer pricing is the predominant way that MNEs are able to shift profits from high-tax jurisdictions to low- or no-tax jurisdictions, a second related means of doing so is through excessive debt loading or what is known as thin capitalisation.[51] This occurs where one part of the MNE, often the parent company, lends money to a subsidiary thereby creating debt rather than investing equity. The outcome is that the subsidiary (borrower) then makes interest payments to the parent company (lender), which attracts a tax deduction in the borrower's jurisdiction rather than profits being taxed and paid as a dividend to the parent company. It is a well-known and common strategy used by MNEs.[52] Not only does this shift profits from a high-tax country to a low- or no-tax country but litigated matters have revealed that, due to mismatch rules, this can result in an interest deduction in one jurisdiction without the interest being recognised as income in another jurisdiction.[53] Further compounding this tax planning strategy is the interest rate at which the money is lent, often at a rate that is advantageous to the MNE and different from the rate at which the parent company has borrowed the money on the basis that the arm's length price is what the subsidiary could borrow the money for. Studies suggest that the issue of excessive debt loading may be greater for developing countries with a finding that these nations are more prone to tax-induced

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[49] Singh, above n 46, 6.
[50] OECD, BEPS Actions, BEPS 2015 Final Reports, <https://www.oecd.org/tax/beps/beps-actions/>.
[51] For a discussion on the current OECD recommended model for addressing excessive debt loading, see OECD, *Limiting Base Erosion Involving Interest Deductions and Other Financial Payments, Action 4 – 2015 Final Report* (OECD Publishing, 2015).
[52] See, for example, Lars P Feld, Jost H Heckemeyer and Michael Overesch, 'Capital Structure Choice and Company Taxation: A Meta-Study' (2013) 37(8) *Journal of Banking and Finance* 2850; Stefan Goldbach, Jarle Møen, Dirk Schindler, Guttorm Schjelderup and Georg Wamser, 'The Tax-Efficient Use of Debt in Multinational Corporations' (2021) 71 *Journal of Corporate Finance* 102119.
[53] *Chevron Australia Holdings Pty Ltd v Federal Commissioner of Taxation* (2017) 251 FCR 40.

profit shifting.[54] One possible explanation given is the limited capacity of these countries to enforce rules that prevent such practices.[55]

Ultimately, the current transfer pricing regime has an inherent bias in favour of wealthy and low-tax jurisdictions and can be utilised by MNEs to shift profits, especially those MNEs that are large and hold valuable intangible assets.[56] It is these same MNEs who are residents of developed, high-income countries who support the ongoing use of the arm's length standard, a standard that, due to its administrative complexity and cost, cannot be adequately enforced by developing nations.[57] The current system is both expensive and time-consuming for administrators and taxpayers alike[58] and is becoming increasingly complex through the introduction of new reforms contained in the ongoing work of the OECD through its BEPS program.[59] Many developing countries had little in the way of anti-avoidance regimes prior to joining the OECD's Inclusive Framework and only implemented transfer pricing regimes in the last decade, with some still not having enacted domestic legislation. To this extent, as of 2019, approximately half of sub-Saharan Africa did not have any form of domestic transfer pricing rules, with the result that MNEs cannot be challenged by local authorities.[60]

The OECD, by its own admission, recognises that although BEPS affects all countries, developing economies suffer disproportionately from the practice due to their heavy reliance on corporate income tax, particularly from multinational enterprises.[61] It also acknowledges that 'engaging developing countries in the international tax agenda is vital, both to help address their specific needs and to ensure they can effectively participate in the process of standard-setting on international tax'.[62] At the same time, the OECDs reform measures have done little in the way of stopping transfer pricing and excessive debt-loading practices of MNEs that disproportionally affect developing countries. Given the failure of the OECD to make substantive reforms to the international tax regime to address these issues, the question remains as to what the UN Tax Convention could propose. The next section of this article suggests that global formulary apportionment may offer a solution that not only benefits all nations but in particular sees those benefits flow to developing countries.

4. GLOBAL FORMULARY APPORTIONMENT: AN ALTERNATIVE MODEL

The significant tax revenue losses and impact of the fundamental flaws in the current regime that continues to be advocated for by the OECD and its Member States suggest that lower-income countries may be more willing to engage in a paradigm shift that would curtail many of the aggressive tax practices of MNEs and provide greater tax

[54] Clemens Fuest, Shafik Hebous and Nadine Riedel, 'International Debt Shifting and Multinational Firms in Developing Economies' (2011) 113(2) *Economics Letters* 135.
[55] Ibid.
[56] Joel Cooper, Randall Fox, Jan Loeprick and Komal Mohindra, *Transfer Pricing and Developing Economies: A Handbook for Policy Makers and Practitioners* (World Bank, 2016).
[57] Yariv Brauner, 'Between Arm's Length and Formulary Apportionment' in Richard Krever and François Vaillancourt (eds), *The Allocation of Multinational Business Income: Reassessing the Formulary Apportionment Option* (Kluwer Law International, 2020) 209.
[58] Picciotto, above n 47.
[59] See IMF, above n 5.
[60] UNCTAD, above n 5.
[61] OECD, 'Base Erosion and Profit Shifting (BEPS)', above n 1.
[62] Ibid.

revenues to all.[63] While the catch-cry of the OECD BEPS program of work has been to equip governments with rules and instruments to address tax avoidance, ensuring that profits are taxed where economic activities generating them take place and where value is created,[64] this is not possible under the current separate accounting, arm's length regime. The treatment of MNEs as having separate parts for tax purposes is the fundamental reason there is the need for the BEPS reform agenda. Therefore, maintaining the current system fails to address this issue, and in order to tax MNEs in accordance with the economic reality that they operate as a single global entity, a tax system needs to recognise this.

A proposed alternative to the current arm's length pricing regime is global formulary apportionment, which comprises a unitary taxation system where profits are allocated to jurisdictions based on economic factors attributable to the creation of profits for the MNE.[65] This system would tax MNEs in every country where there is a significant economic presence and be based on real activities such as sales in those countries.[66] At the outset, global formulary apportionment has the advantage of starting from a position of reality that treats MNEs in accordance with their adopted business model in that they operate as a single firm to maximise global profits.[67] That is, all parts of the MNE are captured as a unitary entity that is commonly owned and controlled. It also reflects the economic integration that has and will continue to occur with modern MNEs that operate in a highly complex manner.[68] All legal entities within an MNE are treated as one and global pre-tax profits are consolidated. A globally agreed method of determining consolidated profits for tax purposes, including the scope of the group and scope of activities, ensures that all profits are captured and can then be allocated under a suitably designed formula.[69]

These globally agreed aggregated profits are allocated to jurisdictions using allocation keys contained in a globally agreed predetermined formula. In line with the notion that profits should be taxed in the location of economic activity, it is recognised that production and sales are essential elements to the generation of profits, with both observable input and output factors generally making up the formula to be used. Supply and demand are balanced with sales, representing an output destination factor, and assets and labour, representing production or input, place of origin factors. As such, sales, physical assets, and labour are the most commonly used allocation keys. Once the formula is applied and profits are allocated to the jurisdiction where economic activity

[63] Picciotto et al, above n 12, 2.
[64] OECD, 'Base Erosion and Profit Shifting (BEPS)', above n 1.
[65] Reuven S Avi-Yonah, Kimberly A Clausing and Michael C Durst, 'Allocating Business Profits for Tax Purposes: A Proposal to Adopt a Formulary Profit Split' (2009) 9(5) *Florida Tax Review* 497; Sol Picciotto, 'Towards Unitary Taxation: Combined Reporting and Formulary Apportionment' in Thomas Pogge and Krishen Mehta (eds), *Global Tax Fairness* (Oxford University Press, 2016) 221 ('Towards Unitary Taxation'); Richard Krever and François Vaillancourt (eds), *The Allocation of Multinational Business Income: Reassessing the Formulary Apportionment Option* (Kluwer Law International, 2020); Sol Picciotto and Jeffery M Kadet, 'The Transition to Unitary Taxation' (2022) 108(4) *Tax Notes International* 453.
[66] Picciotto et al, above n 12, 2.
[67] 'Introduction' in Sol Picciotto (ed), *Taxing Multinational Enterprises as Unitary Firms* (Institute of Development Studies, 2017) 1.
[68] IMF, above n 5, 31.
[69] Kerrie Sadiq, 'A Framework for Assessing Business Sector Formulary Apportionment' in Richard Krever and François Vaillancourt (eds), *The Allocation of Multinational Business Income: Reassessing the Formulary Apportionment Option* (Kluwer Law International, 2020) 185.

has occurred, national sovereignty is maintained as individual countries determine the effective corporate tax rate to be applied.[70]

Formulary apportionment models are neither new nor novel and have been used for many decades in some jurisdictions to allocate subnational profits.[71] Most commonly cited are the models in place in the United States and Canada, where different formulas are applied depending on state/province and industry. Formulary apportionment has also been incorporated into the European Commission's various corporate tax proposals for use within the EU. Initially, formulary apportionment was part of the original *Common Consolidated Corporate Tax Base* (CCCTB) proposal in 2011[72] and the modified two-stage approach in 2016.[73] In 2021, the CCCTB proposal was withdrawn and replaced with the *Business in Europe: Framework for Income Taxation* (BEFIT) proposal.[74] BEFIT contains many of the key features of a global formulary apportionment model where the profits of EU members of an MNE are consolidated into a single tax base and then allocated to Member States using a formula that better reflects the digitalised economy but still incorporates key factors including sales (by destination), assets (including intangibles) and labour (employee numbers and payroll costs). The latest EU proposal, released in September 2023, is an updated BEFIT model designed to reduce the burden of tax compliance for large MNEs operating in the EU.[75] This updated proposal includes a new single set of rules to determine the tax base of MNEs (applying a common set of tax adjustments to financial accounting statements); tax bases of all members of a group to be aggregated into one single tax base; and allocation of a percentage of the aggregated tax base to each group member based on the average taxable results in the prior three fiscal years. This model, if adopted, will be optional for small MNEs but mandatory for large MNEs (turnover exceeding EUR 750 million) and will operate in parallel to the OECD/G20 Inclusive Framework Two-Pillar solution.[76]

Currently, there is also an element of formulary apportionment in the design of the OECD Pillar One proposal.[77] It focuses on the allocation of taxing rights with new rules transferring some of those rights from home countries to countries in which real business activity occurs irrespective of physical presence. Under the current proposal, as revised in July 2023, for in-scope MNEs, revenue will be sourced to end-market jurisdictions where goods or services are used or consumed by customers. This proposal takes into account residual profit where the relevant measure of profit will be financial accounting income with a small number of adjustments.[78] The share of taxable profit will be determined using the 'fractional apportionment method' involving three steps:

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[70] Subject to the current global minimum tax regime.

[71] Picciotto, 'Towards Unitary Taxation', above n 65.

[72] European Commission, *Proposal for a Council Directive on a Common Consolidated Corporate Tax Base (CCCTB)*, COM(2011) 121/4 (2011) <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52011PC0121>.

[73] European Commission, *Proposal for a Council Directive on a Common Corporate Tax Base (CCCTB)*, COM(2016) 685 final (25 October 2016).

[74] European Commission, *Communication from the Commission to the European Parliament and the Council: Business Taxation for the 21st Century*, COM(2021) 251 final (18 May 2021).

[75] European Commission, *Proposal for a Council Directive on Business in Europe: Framework for Income Taxation (BEFIT)*, COM(2023) 532 final (12 September 2023).

[76] Ibid.

[77] OECD, *Programme of Work to Develop a Consensus Solution to the Tax Challenges Arising from the Digitalisation of the Economy* (OECD Publishing, 2019); OECD, *Statement on a Two-Pillar Solution to Address the Tax Challenges Arising from the Digitalisation of the Economy* (1 July 2021).

[78] See Avi-Yonah, Clausing and Durst, above n 65, for a discussion on a residual profit method.

determine the profit to be divided; select an allocation key; and apply this formula to allocate a fraction of the profit to jurisdictions. The allocation key may include any combination of sales, users, assets and employees. Unfortunately, the current proposal would result in only a small amount of the profits of a select number of MNEs being subject to any apportionment, with most of the profits falling within existing rules.[79]

The overarching arguments for global formulary apportionment are threefold.[80] First, such a system would better align the allocation of profits with an MNE's real economic activity. This would result in corporate tax being paid in the jurisdictions that generate the profits for the entity as a whole rather than the specific parts of the entity based on a legal notion of location. The allocation keys represent value creation, whether through a proxy for production such as labour and capital, or sales. A model that taxes the overall profits of an MNE also results in those profits being taxed once and only once. That is, there is no opportunity for double taxation or less than single taxation. Ancillary to the substantive benefit of ensuring tax revenues are collected in the country where economic activity occurs, an approach that allocates profits based on economic reality has the benefit of providing a more straightforward system for both revenue authorities and MNEs to administer.[81]

Second, global formulary apportionment completely ignores intra-group transactions, thereby removing the fiction of the arm's length price. The need to place a value on internal transfers and charges disappears as only transactions external to the group as a whole are taken into account. Transfer pricing regimes for tax purposes become redundant. Further, depending on the allocation keys used, the ability to shift profits to locations where intangible property is held is removed. Tax liabilities under a formulary apportionment regime are based on global income with that income allocated to locations where real economic activity occurs. The use of low- or no-tax jurisdictions is significantly reduced as very little activity occurs in these locations, and therefore, very little profit would be allocated for the purposes of taxation and there would be no tax savings.[82]

The ability to significantly reduce aggressive tax planning is also coupled with reduced compliance costs for MNEs and administrative costs for revenue authorities. Put simply, formulary apportionment removes the opportunity for profit shifting through such means as transfer pricing and excessive debt loading.[83] The replacement of transfer pricing regimes would mean that audits and complex legal matters are redundant. By its very nature, a formulary apportionment model that is global adopts universal standards such as financial reporting requirements which means that it is much less costly to administer, thereby reducing the disadvantages faced by developing countries that lack the human capital and resources to manage a transfer pricing regime.[84] A lack of revenue authority resources and capacity is well documented as a challenge to developing countries and simplification of tax policies is key to removing constraints faced by these

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[79] Picciotto et al, above n 12.
[80] See contributions in Krever and Vaillancourt, above n 65; Sol Picciotto (ed), *Taxing Multinational Enterprises as Unitary Firms* (Institute of Development Studies, 2017).
[81] Picciotto et al, above n 12, 3.
[82] Reuven S Avi-Yonah and Kimberly A Clausing, 'A Proposal to Adopt Formulary Apportionment for Corporate Income Taxation: The Hamilton Project' (University of Michigan Law School Law & Economics Working Papers, 2007); Avi-Yonah, Clausing and Durst, above n 65.
[83] IMF, above n 5.
[84] Brauner, above n 57, 237.

nations.[85] Studies reveal that tax compliance costs in developing countries is also higher.[86] Again, the substantive benefits of reduced base erosion and profit shifting is complemented by reduced complexity and compliance costs.

The third major advantage of a global formulary apportionment regime is that the overall ability of MNEs to shift profits is significantly reduced because allocation keys such as labour and tangible assets represent real activity and investment in a country. These factors would need to be shifted to a jurisdiction to shift profit allocation. This would represent genuine economic activity being shifted, which results in host country tax bases being protected. Countries that offer tax incentives and/or low or no corporate taxes are no longer attractive to MNEs as there is no genuine activity in the location in order to attract an allocation of profits. Countries would only attract the business of MNEs where they offer real investment opportunities such as a workforce with relevant skills along with suitable infrastructure.[87] In doing so, local firms would no longer be at a disadvantage compared to MNEs that can currently take advantage of the ability to shift profits under the current international tax rules. Also contributing to the reduction in profit shifting is the potential transparent nature of formulary apportionment. A global formulary apportionment model shifts the administration for the distribution of profits to be taxed away from the current one-sided MNE approach to a revenue authority, agreement-based approach, potentially operating within treaties.[88]

Global formulary apportionment's broad and underlying benefits apply equally to developed countries and developing countries, the latter in which corporate income tax is essential for the improvement of health and education, the reduction of inequality, and economic growth. The above discussion highlights the fact that formulary apportionment has the ability to stem MNEs' aggressive tax planning strategies adopted through transfer pricing and excessive debt-loading practices. In addition to the substantive benefit of potentially increasing tax revenues, it is argued that formulary apportionment also provides a simplified way of taxing MNEs, thereby reducing administrative costs for revenue authorities. However, while it can be argued that global formulary apportionment is a theoretically superior model for the profit allocation of MNEs, the design elements are not without challenges. The next section of this article considers these challenges.

5. DESIGNING A FORMULARY APPORTIONMENT MODEL

Despite the theoretical attractiveness of global formulary apportionment, arguing that developing countries should advocate for such a model as part of the UN Framework Convention on International Tax Cooperation is fraught with difficulties. A globally adopted formulary appointment regime contains several components that need to be agreed upon: a test for taxable presence; a definition of the tax base to be divided, that is, a globally agreed means of calculating consolidated pre-tax profits; a determination of the allocation keys used to apportion the tax base; and an agreed formula for allocation of a share of those pre-tax profits to the relevant jurisdictions.

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[85] IMF, 'Tax Administration in Developing Countries: Strategies and Tools of Implementation' (Background Paper for the 1988 World Bank World Development Report, 1989).
[86] Wollela Abehodie Yesegat, Jacqueline Coolidge and Laurent Olivier Corthay, 'Tax Compliance Costs in Developing Countries: Evidence from Ethiopia' (2017) 15(1) *eJournal of Tax Research* 77.
[87] Picciotto et al, above n 12, 3.
[88] Brauner, above n 57.

Formulary apportionment would require a move away from the traditional physical presence approach to nexus that gives a country the right to tax, to the adoption of a new nexus for taxing rights. It has already been recognised that the traditional concept of the permanent establishment contained in the current regime is outdated, with proposals that nexus should be based on 'significant economic presence'. A great deal of work has been done on this concept by the OECD in its work on Pillar One[89] and domestic jurisdictions where sales are captured for the purposes of indirect taxes.[90] The most likely approach within a formulary apportionment model is to impose a minimum sales threshold, such as in the Pillar One proposal.[91] However, such factors as the existence of a user base and associated data, the volume of digital content derived from the jurisdiction, billing and collection in local currency or with a local form of payment, the maintenance of a website in a local language, responsibility for the final delivery of goods to customers or other support services (eg, after-sales service, repairs and maintenance), or sustained marketing and sales promotion activities (whether online or not) to attract customers could be used.[92]

A more challenging aspect of global formulary apportionment is the allocation of an MNE's consolidated pre-tax profits. This would also require agreement on the methodology for determining the global consolidated pre-tax profits to be apportioned (the tax base), and the apportionment factors or allocation keys and the formula to be used. The concept of the tax base is generally thought to be relatively simple, with financial accounting standards providing the basis for determining the consolidated group and accounts. Examples of the use of financial accounting standards and the resulting statements are already contained in CbCR models, and are the subject of this study. However, this would not come without challenges such as any adjustments that may need to be made for tax purposes.

The most difficult component of a formulary apportionment model is the formula itself, with the allocation keys and weightings needing to be determined. The allocation keys traditionally included in any formula are assets, employees (payroll and/or number), and sales as these are the factors that are considered to contribute to the profits of an MNE. While each factor contributes to profits, under a formulary apportionment model, any factor used also attracts tax. As such, the consequences of adoption need to be considered. For example, the use of the production factors of capital and labour means that countries with lower tax rates may attract MNEs, and non-tax incentives may be more likely to drive investment. On the other hand, a destination-based sales factor that focuses on demand will have little effect on any investment decision by the MNE. The use of a capital factor also comes with challenges as to what is included. Generally, the inclusion of intangible assets is rejected on the basis that a formula should be designed to allocate profits to the location of physical activity. Tangible assets have a geographical connection with a country on the basis that the assets are required as an

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[89] OECD, 'Addressing the Tax Challenges of the Digitalisation of the Economy – Policy Note, as Approved by the Inclusive Framework on BEPS on 23 January 2019' (2019).
[90] Picciotto et al, above n 12, 4.
[91] OECD, 'Multilateral Convention to Implement Amount A of Pillar One', <https://www.oecd.org/en/topics/sub-issues/reallocation-of-taxing-rights-to-market-jurisdictions/multilateral-convention-to-implement-amount-a-of-pillar-one.html>.
[92] Transfer Pricing Specialists, 'OECD Issues a Discussion Paper on Taxation of the Digital Economy', <https://international-tps.com/oecd-issues-a-discussion-paper-on-taxation-of-the-digital-economy/>.

element of production. In contrast, intangible assets may be held in any location without a business rationale beyond reducing taxes.

An employment factor is logical. However, it creates inequities where it is based on payroll alone. Significant wage disparities between jurisdictions may result in a disproportionate share of profits being allocated to countries with high wage rates. An employee factor based on number of employees is important to low-income countries where the labour force is cheap. Prior literature notes that developing countries gain mostly if employment receives a larger weighting in the formula.[93]

Support for formulary apportionment is often based on the premise that it would benefit developing nations by increasing corporate tax revenue and making administration easier.[94] Prior empirical research supports the assertion that global revenue may increase under formulary apportionment due to a reallocation of the tax base away from low- and no-tax jurisdictions and towards high-tax countries, with the potential for distributional effects to be large.[95] The International Monetary Fund (IMF), using aggregate data on US MNEs and firm-level data on global MNEs, has previously provided some observations for the application of formulary apportionment for developing countries.[96] However, results differ significantly based on the datasets, and coverage of developing counties is limited. The IMF found that advanced economies are more likely to gain revenue if apportionment is by value added, payroll or sales, and somewhat less likely to benefit if it is by employment; 'investment hubs' are likely to experience significant reductions in tax base; emerging economies tend to benefit from formulary apportionment, although this is clearest for apportionment by employment or sales, and less so if by value added or payroll; and developing economies may benefit if apportionment is largely by employment.[97]

While there are numerous proposals and logic to the argument that the importance of production factors means that developing countries would benefit, the question remains as to whether and what formula would assist developing nations in increased tax revenue. As noted by the IMF in 2019 little evidence is available to support both the premise that developing countries would be better off and what formula would provide such a benefit.[98] Without empirical evidence that developing nations would, in fact, collect more corporate tax revenue under an allocation model, any proposals remain theoretical. The next section of this article contributes to the literature on the benefits of

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[93] Thornton Matheson, Sebastian Beer, Maria Coelho, Li Liu and Oana Luca, 'Formulary Apportionment in Theory and Practice' in Ruud de Mooij, Alexander Klemm and Victoria Perry, (eds), *Corporate Income Taxes Under Pressure: Why Reform Is Needed and How It Could Be Designed* (International Monetary Fund, 2021) 283.

[94] See for example, Sol Picciotto, 'Taxing Multinational Enterprises as Unitary Firms' (International Centre for Tax and Development Working Paper No 53, 2016).

[95] See, for example, Michael P Devereux and Simon Loretz, 'The Effects of EU Formula Apportionment on Corporate Tax Revenues' (2008) 29(1) *Fiscal Studies* 1; James R Hines, Jr, 'Income Misattribution Under Formula Apportionment' (2010) 54(1) *European Economic Review* 108; Alex Cobham and Simon Loretz, 'International Distribution of the Corporate Tax Base: Implications of Different Apportionment Factors Under Unitary Taxation' (International Centre for Tax and Development Working Paper No 27, 2014).

[96] IMF, above n 5, 33.

[97] Ibid.

[98] Ibid 32.

global formulary apportionment for developing countries by empirically testing the redistribution of global profits of MNEs.

6. EMPIRICALLY TESTING FORMULARY APPORTIONMENT

This empirical study aims to assess the effects of a formulary apportionment model on developing nations and investigate potential increases or decreases in revenue collected using different apportionment formulas. The availability of voluntary disclosures under the OECD Action 13 and GRI 207 reporting mechanisms means that it is possible to determine, with some degree of confidence, the country-level effects of a shift to formulary apportionment.

Traditionally, assessing the impact and effectiveness of formulary apportionment has been challenging due to the relative non-accessibility and, specifically, data limitations in relation to both the pre-tax profits and the relevant apportionment factors.[99] While consolidated financial statements provide a level of confidence to stakeholders regarding an MNE's tax position, they do not provide jurisdiction-level tax data and, hence, cannot be used to determine the effects of a formulary apportionment model. However, recent developments in public country-by-country reporting, both voluntary and mandatory, have reduced information asymmetry caused by MNE tax returns and accompanying documents being available only to revenue authorities, and mean that it is now possible to predict the effects of different formulas under a global formulary apportionment model to a reasonable level of accuracy. Prior studies highlight the fact that there has previously been insufficient suitable data to facilitate the comprehensive assessment of formulary apportionment proposals and suggest that it is likely that comprehensive CbCR data would resolve data limitation issues and enable more precise assessments over a wide range of policy scenarios.[100]

Mandatory public disclosure of CbCRs has been a requirement for financial institutions in the EU since 2013,[101] while the Extractive Industries Transparency Initiative means that some MNEs in the extractive industry publicly disclose a CbCR disclosing taxes and payments to governments at a project level.[102] Beyond these mandatory disclosure requirements, numerous MNEs now voluntarily disclose their CbCRs at a more granular level. The most common disclosure mechanisms that provide relevant information are the Global Reporting Initiative (GRI) standards[103] and the public release of CbCRs under the OECD's BEPS Action 13 minimum standards.

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[99] Kerrie Sadiq, Richard Krever and Devika Bhatia, 'International Taxation and the Frustrations of Formulary Apportionment Estimation' (2024) *Journal of Accounting Literature* (advance).

[100] See, for example, Alex Cobham, Petr Janský, Chris Jones and Yama Temouri, 'An Evaluation of the Effects of the European Commission's Proposals for the Common Consolidated Corporate Tax Base' (2021) 28(1) *Transnational Corporations* 29; Ruud De Mooij, Li Liu and Dinar Prihardini, 'An Assessment of Global Formula Apportionment' (2021) 74(2) *National Tax Journal* 431.

[101] European Parliament and Council of the European Union, *Directive 2013/36/EU on Access to the Activity of Credit Institutions and the Prudential Supervision of Credit Institutions and Investment Firms, Amending Directive 2002/87/EC and Repealing Directives 2006/48/EC and 2006/49/EC* [2013] OJ L176/338.

[102] Extractive Industries Transparency Initiative (EITI), *Progress Report 2023*.

[103] See GRI, <https://www.globalreporting.org/>: the Global Reporting Initiative (GRI) has described itself as 'an independent not-for-profit organization that leads a global multi-stakeholder process to develop and refine rigorous yet practical sustainability reporting. Using the GRI Standards, organizations can understand and act on the full range of their impacts. GRI's consistent, comparable and globally applicable standards have become the world's most widely used sustainability reporting standards. The GRI Standards are

Since 2016, large MNEs headquartered in countries implementing the OECD's BEPS minimum standards have been required to submit a non-public CbCR to revenue authorities. Action 13, entitled *Transfer Pricing Documentation and Country-by-Country Reporting*, requires MNEs headquartered in an Inclusive Framework member country with consolidated revenue exceeding EUR 750 million to lodge an annual CbCR with the local revenue authority. The report, containing information on revenues (third-party and related-party), profit (loss) before income tax, income tax paid and accrued, employee numbers, stated capital, retained earnings, and tangible assets, for each jurisdiction in which the MNE operates, is designed to be a transfer pricing risk assessment tool for use by revenue authorities for transfer pricing assessments.[104] While mandatory, these CbCRs are not publicly available. However, consistent with calls for increased voluntary disclosure of corporate tax practices, some MNEs voluntarily disclose this information more broadly.

Beyond the formal OECD reporting requirements, the Global Sustainability Standards Board, an independent organisation providing standards for sustainability and ESG reporting (GRI Standards), provides a global standard for tax transparency. The first global standard for tax transparency, GRI 207 was announced in December 2019 and is widely regarded as global best practice.[105] Unlike the OECD's BEPS Action 13, GRI 207 is specifically designed for public reporting. GRI 207 is effective for reports published on or after 1 January 2021, although earlier adoption was encouraged, and consists of four key disclosures: (i) 207-1 Approach to tax; (ii) 207-2 Tax governance, control and risk management; (iii) 207-3 Stakeholder engagement and management of concerns related to tax; and (iv) 207-4 Country-by-country reporting.

The suitability of the use of this data to determine the consolidated pre-tax profit base and subsequent allocation of those profits across countries using global formulary apportionment has previously been considered, finding that heterogeneity across CbCRs 'inhibits a clean determination of an MNE's consolidated pre-tax profit base and hampers comparisons across firms'.[106] Of significance is the 'potential double counting of intra-group transactions, inconsistent treatment of discontinued operations and equity-accounted associates and joint ventures, non-disclosure of items or countries, and differing definitions of disclosure items'.[107]

The starting point for a formulary appointment model is aggregate jurisdiction-level information in the CbCRs. MNEs achieve this in one of two ways: a top-down approach that splits balances in the audited consolidated financial statements into countries of origin and a bottom-up approach that aggregates subsidiary-level financial statements to determine CbCR figures. The first approach incorporates all intra-group transactions that are eliminated in the consolidated financial statements resulting in post-elimination CbCR data. This means there is no double counting of intra-group transactions. The second approach provides data on a pre-consolidated basis and excludes eliminations,

trusted by thousands of organizations around the world, providing the building blocks for transparent reporting, and helping them to manage risks and opportunities and support strategic decision-making'.

[104] OECD, *Guidance on Transfer Pricing Documentation and Country-by-Country Reporting* (OECD Publishing, 2014).

[105] Global Sustainability Standards Board, *GRI 207: Tax 2019* (Topic Standard, 2019) <https://www.globalreporting.org/>.

[106] Rodney J Brown, Bjorn N Jorgensen and Kerrie Sadiq, 'Revisiting Unitary Taxation with Formulary Apportionment Using Public Country-by-Country Reports' [2024] (3) *British Tax Review* 407, 408.

[107] Ibid.

resulting in the potential for double counting of intra-group revenue and profits such as related-party dividends. To this extent, where MNEs adopt the CbCR recommended approach under the GRI 207 standard, more suitable data is likely to be provided as compared to the OECD Action 13 reports.

Paragraph 2.2.1 of GRI 207-4 specifically requires certain figures in CbCRs to be reconciled with corresponding amounts in audited consolidated financial statements with an explanation for any differences. Third-party revenues, profit/(loss) before tax, tangible assets and cash taxes paid must be reconciled or explained, so the risk of double counting intra-group transactions is removed. The OECD reporting requirements are inconsistent with a reconciliation with financial statements as it is a requirement under this standard that MNEs provide CbCR reporting based on aggregation rather than consolidation.[108] MNEs may provide limited information on eliminations but often without country specific data.

The current study takes advantage of this recently available data and analyses a unique hand-collected data set of 231 CbCRs disclosed by firms that voluntarily report under GRI 207 or disclose their OECD Action 13 CbCR. An online search was conducted to identify voluntary CbCR disclosures using publicly available sources, including members of the European Business Tax Forum (EBTF), B Team endorsing companies, and GRI early adopters.[109] The process identified an initial sample of 90 firms and a total of 333 CbCRs up to 30 June 2024. CbCRs were hand collected, and the information contained therein coded into an Excel spreadsheet. The data recorded consists of the CbCR's location, the reporting framework adopted, whether information was provided regarding the exclusion of related-party dividends from revenues and pre-tax profits, the items disclosed, and whether CbCR totals for key disclosure items reconciled to the corresponding items in the annual report.

To account for the potential double counting of intra-group transactions, the sample was restricted to those CbCRs where the total profit before tax figure reconciles to the corresponding amount in the Consolidated Income Statement within +/- 10 per cent. This reduces the initial sample by 15 firms and 102 CbCRs giving a final sample of 231 CbCRs voluntarily disclosed by 75 firms across the 2015-2023 period. The firms are headquartered in 16 countries and operate in 14 different industries. By restricting the sample to these firms, the chance of counterfactual pre-tax profit estimation errors driven by intra-group transactions as discussed above is minimised. The unitary tax base is defined as the consolidated pre-tax profit/(loss) for financial accounting purposes without adjustments for tax purposes, as this is the only profit figure disclosed in CbCRs. A variety of reporting currencies are observed and so all amounts are converted to EUR millions using average exchange rates.

To estimate the shift in pre-tax profits and tax revenues between countries under a global formulary apportionment model, it is initially necessary to rely on a classification system of developed versus developing countries. While various international organisations such as the World Bank and the UN use their own classification system

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[108] The BEPS Action 13 Report and model legislation permits the 'top-down' approach for jurisdictions that allow consolidated reporting for tax purposes: OECD, *Transfer Pricing Documentation and Country-by-Country Reporting, Action 13 – 2015 Final Report* (OECD Publishing, 2015).

[109] Other sources include early GRI adopters (see GRI, 'Universal Standards', <https://www.globalreporting.org/standards/standards-development/universal-standards/>).

and terminology, there is no universally agreed list. For the purposes of this study, both of those lists are relied upon. First, the 2022 World Bank country classifications contained in the UN's *World Economic Situation and Prospects* report were used to categorise countries into four groups: 'high income', 'upper middle income', 'lower middle income', and 'low income' (Appendix 2). [110] These classifications are determined by reference to gross national income (GNI) per capita. Second, the UN classifications system, containing three categories was used, with those categories being 'developed', 'in transition', and 'developing' (Appendix 3).[111] CbCR disclosures are nuanced in that they report data at the jurisdictional level and so there are some jurisdictions that are not included in the World Bank and UN country classifications. Therefore, we classify these jurisdictions so that they align with their nearest neighbour or with the country they have constitutional links with. For example, Guernsey and Jersey are given the same classification as the UK and Monaco is given the same classification as France. Finally, an 'unclassified' category is used to include those countries reported in an 'Other' category in CbCRs. Despite CbCR reporting rules requiring data to be reported at the country level, some firms aggregate countries into an 'Other' group thereby obfuscating the information.

Four different formulas were then tested to estimate the shift in consolidated pre-tax profits and tax revenues from high-income countries to lower-income countries. First, a modified version of the EU's proposed CCCTB multi-factor formula is applied:

$$\hat{}PBT_{i,j,t} = \tfrac{1}{3}*REV\_TP_{i,j,t} + \tfrac{1}{3}*EMP\_NUM_{i,j,t} + \tfrac{1}{3}*AST\_TAN_{i,j,t}$$

PBT is the estimated pre-tax profits/(losses) allocated by firm *i* to country *j* in year *t* while *REV_TP*, *EMP_NUM* and *AST_TAN* are the equally weighted third-party revenues, number of employees and tangible assets recognised by firm *i* in country *j* in year *t*, respectively. The differences between the observed pre-tax profit/(loss) and counterfactual pre-tax profit/(loss) are then calculated. All variables are defined in Appendix 1.

Three additional alternative formulas were then applied to determine the counterfactual PBT:

$$\hat{}PBT_{i,j,t} = \tfrac{1}{2}*REV\_TP_{i,j,t} + \tfrac{1}{2}*EMP\_NUM_{i,j,t}$$

$$\hat{}PBT_{i,j,t} = \tfrac{1}{2}*REV\_TP_{i,j,t} + \tfrac{1}{2}*AST\_TAN_{i,j,t}$$

$$\hat{}PBT_{i,j,t} = \tfrac{1}{2}*EMP\_NUM_{i,j,t} + \tfrac{1}{2}*AST\_TAN_{i,j,t}$$

The results of the reallocation of pre-tax profits using the World Bank country classification are presented in Table 1 (Appendix 4), while the results of the reallocation of pre-tax profits using the UN country classification are presented in Table 2 (Appendix 5).

Contrary to expectations, the results demonstrate that 'high income' (Table 1) and 'developed' (Table 2) countries have a net gain of pre-tax profits using all four formulas, while 'in transition' countries have a net loss using all four formulas, and 'developing' countries *have a net loss of pre-tax profits* using three of the four formulas. Similarly,

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[110] United Nations, *World Economic Situation and Prospects 2022* (2022).
[111] These categories are also listed in the UN *World Economic Situation and Prospects* report, ibid.

while 'low income' countries gain pre-tax profits under three of the four formulas, the gains are small relative to the gains for 'high income' and 'lower middle income' countries. Overall, the results do not align with the general expectation that 'developing' countries and 'low income' countries would gain significantly under a formulary apportionment system.

However, upon further investigation, there are 19 nations that are classified as 'developing' countries by the UN yet are classified as 'high income' countries by the World Bank. These 19 nations are Bahamas, Bahrain, Barbados, Brunei, Chile, Hong Kong SAR, Israel, Kuwait, Macau, Oman, Panama, Qatar, Saudi Arabia, Singapore, South Korea, Taiwan, Trinidad and Tobago, United Arab Emirates (UAE), and Uruguay. Many of these jurisdictions are anomalous entrants on the 'developing countries' list. For example, Bahamas, Bahrain, Barbados, Brunei, Hong Kong SAR, Panama, and Singapore are commonly found on tax haven lists used in the empirical tax literature or are low- or no-tax jurisdictions such as Oman and the UAE. Given these anomalies, these 19 countries were reclassified from 'developing' to 'developed' countries.

The adjusted redistribution of pre-tax profits using the UN country classification are presented in Panel A of Table 3 (Appendix 6). The results are more in line with expectations that 'developing countries' stand to benefit from a formulary apportionment system. Specifically, 'developing countries' gain additional pre-tax profits under three of the four formulas ranging from EUR 458 million to EUR 18,030 million representing an increase of 0.4 per cent and 15.3 per cent on the total pre-tax profits of EUR 117,749 million, respectively. The largest gain is generated when using an equal weighting of employee numbers and tangible assets which demonstrates developing countries do better when there is a heavier weighting to real economic factors. Unlike revenues, physical factors are less mobile and hence less manipulatable. The gain in aggregate pre-tax profits of EUR 18,030 million translates to additional total corporate tax revenues of approximately EUR 2,705 million using the recently adopted global minimum corporate tax rate of 15 per cent.[112]

Further, the UN provides an additional classification called 'least developed countries' which is a subset of its 'developing countries' classification (see Appendix 3). The results from estimating the four formulas for this group of countries is presented in Panel B of Table 3. Despite the fact these countries do not have significant activity reported in them in CbCRs (an aggregate pre-tax profit of EUR 3,257 million), they have additional pre-tax profit redistributed to them under three of the four formulas. Specifically, the increases under the first, third and fourth formulas of EUR 1,245 million, 1,887 million, and 2,979 million represent increases of 38.2 per cent, 57.9 per cent and 91.5 per cent, on the total pre-tax profit of EUR 3,257 million, respectively.

7. Conclusion

In the real world, MNEs operate as unitary enterprises under a central management and control model in which they aim to maximise global profits, by taking advantage of economic globalisation. Negative externalities are internalised, and synergies are provided. At the same time, activities and markets are located and accessed on a global scale, providing these entities with much greater profits than what would be earned by

[112] This assumes that pre-tax accounting profits are a reasonable proxy for taxable profits.

separate enterprises.[113] Yet, contrary to the business reality, from a legal perspective, and more specifically, currently from a taxing perspective, MNEs lack a unitary corpus. Logically, however, 'each MNE should be taxed on its global profits, with taxing rights allocated to all countries in proportion to that MNE's real activities in each country'.[114] A global formulary apportionment model would achieve this through global consolidated profits of an MNE being allocated to the jurisdiction in which there is a significant economic presence. Each country would maintain national sovereignty around its corporate tax rates which could work in concert with the current global minimum tax of 15 per cent.[115]

To date, the OECD BEPS program of reform has failed to address many of the aggressive tax strategies adopted by MNEs. Previous literature suggests that:

> [t]he only simple and effective way to deliver on the aims of the BEPS project is to tax MNEs in accordance with the economic reality that they operate as unitary enterprises under common ownership and control. This means that they should be taxed in every country where they have a significant economic presence (including sales), based on an apportionment of their total global profits for taxation in proportion to their real economic activities in that country.[116]

The IMF has recognised that formulary apportionment offers a simpler system for developing countries as compared to complex transfer pricing regimes thereby reducing the challenges faced by these nations.[117]

The ideal mechanism for a move towards global formulary apportionment is through a model treaty developed and supported by a global tax body.[118] To date, there is little suggestion that the OECD would be willing to advance such a strategy in any meaningful way. At the UN General Assembly in July 2023, the Report of the Secretary-General on the Promotion of Inclusive and Effective International Tax Cooperation at the United Nations provided a clear statement on the need for a tax regime that works for all jurisdictions, both administratively and in terms of ensuring taxes are paid where economic activity occurs, including through relevant market participation.[119]

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[113] Coase, above n 40.
[114] Picciotto et al, above n 12, 3.
[115] Implemented under Pillar Two of the OECD's program of reform.
[116] Picciotto et al, above n 12, 2.
[117] Juan Carlos Benitez, Mario Mansour, Miguel Pecho and Charles Vellutini, *Building Tax Capacity in Developing Countries* (IMF Staff Discussion Note SDN/2023/006, 2023); IMF, above n 5.
[118] Picciotto et al, above n 12, 2.
[119] United Nations, *Promotion of Inclusive and Effective International Tax Cooperation at the United Nations, Report of the Secretary-General*, UN Doc A/78/235 (26 July 2023) para 12.

8. APPENDICES

Appendix 1: Variable Definitions and Country Classifications

All variables are disclosed in country *j* by firm *i* in year *t.*

Variable	Mnemonic
Revenue – Third Party	REV_TP
Profit/(loss) before tax	PBT
Tangible assets	AST_TAN
Employees – number	EMP_NUM

Appendix 2: World Bank Country Classifications 2022

'High Income': Australia, Austria, Bahamas, Bahrain, Barbados, Belgium, Brunei, Darussalam, Canada, Chile, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong SAR, Hungary, Iceland, Ireland, Israel, Italy, Japan, Kuwait, Latvia, Lithuania, Luxembourg, Malta, Netherlands, New Zealand, Norway, Oman, Panama, Poland, Portugal, Qatar, Republic of Korea, Romania, Saudi Arabia, Singapore, Slovakia, Slovenia, Spain, Sweden, Switzerland, Taiwan, Province of China, Trinidad and Tobago, United Arab Emirates, United Kingdom, United States, Uruguay.

'Upper middle income': Albania, Argentina, Armenia, Azerbaijan, Belarus, Belize, Bosnia, and Herzegovina, Botswana, Brazil, Bulgaria, China, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, Equatorial Guinea, Fiji, Gabon, Georgia, Guatemala, Guyana, Iraq, Jamaica, Jordan, Kazakhstan, Libya, Malaysia, Maldives, Mauritius, Mexico, Montenegro, Namibia, North Macedonia, Paraguay, Peru, Republic of Moldova, Russian Federation, Serbia, South Africa, Suriname, Thailand, Türkiye, Turkmenistan.

'Lower middle income': Algeria, Angola, Bangladesh, Benin, Bhutan, Bolivia (Plurinational State of), Cabo, Verde, Cambodia, Cameroon, Comoros, Congo, Côte d'Ivoire, Djibouti, Egypt, El Salvador, Eswatini, Ghana, Haiti, Honduras, India, Indonesia, Iran (Islamic Republic of), Kenya, Kiribati, Kyrgyzstan, Lao People's Democratic Republic, Lebanon, Lesotho, Mauritania, Mongolia, Morocco, Myanmar, Nepal, Nicaragua, Nigeria, Pakistan, Papua New Guinea, Philippines, Samoa, Sao Tome and Principe, Senegal, Solomon Islands, Sri Lanka, State of Palestine, Tajikistan, Timor-Leste, Tunisia, Ukraine, United Republic of Tanzania, Uzbekistan, Vanuatu, Viet Nam, Zimbabwe.

'Low income': Afghanistan, Burkina Faso, Burundi, Central African Republic, Chad, Democratic People's Republic of Korea, Democratic Republic of the Congo, Eritrea, Ethiopia, Gambia, Guinea, Guinea-Bissau, Liberia, Madagascar, Malawi, Mali, Mozambique, Niger, Rwanda, Sierra Leone, Somalia, South Sudan, Sudan, Syrian Arab Republic, Togo, Uganda, Yemen, Zambia.

Appendix 3: United Nations Country Classifications 2022

'Developed': Australia, Austria, Belgium, Bulgaria, Canada, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Lithuania, Luxembourg, Malta, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom, United States.

'In transition': Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Georgia, Kazakhstan, Kyrgyzstan, Republic of Moldova, Montenegro, North Macedonia, Russian Federation, Serbia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan.

'Developing': Afghanistan, Algeria, Angola, Argentina, Bahamas, Bahrain, Barbados, Bangladesh, Belize, Benin, Bhutan, Bolivia (Plurinational State of), Botswana, Brazil, Brunei Darussalam, Burkina Faso, Burundi, Cabo Verde, Cambodia, Cameroon, Central African Republic, Chad, Chile, China, Colombia, Comoros, Costa Rica, Cuba, Democratic Republic of the Congo, Congo, Côte d'Ivoire, Democratic People's Republic of Korea, Djibouti, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Eswatini, Ethiopia, Fiji, Gabon, Gambia, Ghana, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong SAR, India, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Jamaica, Jordan, Kenya, Kiribati, Kuwait, Lao People's Democratic Republic, Lebanon, Lesotho, Liberia, Libya, Madagascar, Mauritania, Mexico, Morocco, Malaysia, Malawi, Maldives, Mali, Mauritius, Mexico, Mongolia, Mozambique, Myanmar, Namibia, Nepal, Nicaragua, Niger, Nigeria, Oman, State of Palestine, Panama, Papua New Guinea, Pakistan, Paraguay, Peru, Philippines, Qatar, Rwanda, Samoa, Sao Tome and Principe, Saudi Arabia, Senegal, Sierra Leone, Singapore, Solomon Islands, Somalia, South Africa, Republic of Korea, South Sudan, Sri Lanka, Sudan, Suriname, Taiwan Province of China, United Republic of Tanzania, Thailand, Timor-Leste, Togo, Trinidad and Tobago, Tunisia, Türkiye, Syrian Arab Republic, United Arab Emirates, Uganda, Uruguay, Vanuatu, Venezuela (Bolivarian Republic of), Viet Nam, Yemen, Zambia, Zimbabwe.

'Least developed': Afghanistan, Angola, Bangladesh, Benin, Bhutan, Burkina Faso, Burundi, Cambodia, Central African Republic, Chad, Comoros, Democratic Republic of the Congo, Djibouti, Eritrea, Ethiopia, Gambia, Guinea, Guinea-Bissau, Haiti, Kiribati, Lao People's Democratic Republic, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Myanmar, Nepal, Niger, Rwanda, Sao Tome and Principe, Senegal, Sierra Leone, Solomon Islands, Somalia, South Sudan, Sudan, Timor Leste, Togo, Tuvalu, Uganda, United Republic of Tanzania, Yemen, Zambia.

Appendix 4

Table 1: Redistribution of Profits Using Formulary Apportionment: World Bank Country Classifications (EUR million)

Jurisdiction		⅓*REV_TP + ⅓*EMP_NUM + ⅓*AST_TAN	½*REV_TP + ½*EMP_NUM	½*REV_TP + ½*AST_TAN	½*EMP_NUM + ½*AST_TAN
High income:	TO	€147,379	€157,497	€168,771	€139,577
	FROM	(€116,620)	(€128,096)	(€117,911)	(€127,560)
	NET	€30,759	€29,401	€50,859	€12,016
Upper middle income:	TO	€19,642	€22,185	€14,353	€25,436
	FROM	(€34,128)	(€32,297)	(€43,588)	(€29,547)
	NET	(€14,486)	(€10,112)	(€29,235)	(€4,110)
Lower middle income:	TO	€25,290	€24,954	€20,330	€30,884
	FROM	(€17,922)	(€21,629)	(€17,913)	(€14,521)
	NET	€7,368	€3,325	€2,417	€16,363
Low income:	TO	€1,347	€1,132	€1,141	€1,889
	FROM	(€427)	(€1,282)	(€108)	(€11)
	NET	€920	(€150)	€1,034	€1,878
Unclassified:	TO	€0	€0	€0	€0
	FROM	(€24,562)	(€22,464)	(€25,075)	(€26,146)
	NET	(€24,562)	(€22,464)	(€25,075)	(€26,146)
TOTAL		-	-	-	-

Appendix 5

Table 2: Redistribution of Profits Using Formulary Apportionment: United Nations Country Classifications (EUR million)

Jurisdiction		⅓*REV_TP + ⅓*EMP_NUM + ⅓*AST_TAN	½*REV_TP + ½*EMP_NUM	½*REV_TP + ½*AST_TAN	½*EMP_NUM + ½*AST_TAN
Developed:	TO	€137,661	€136,245	€146,089	€133,839
	FROM	(€94,810)	(€106,363)	(€96,936)	(€84,323)
	NET	€42,850	€29,882	€49,153	€49,517
In transition:	TO	€1,450	€1,515	€1,559	€2,711
	FROM	(€8,538)	(€12,297)	(€7,459)	(€7,292)
	NET	(€7,088)	(€10,782)	(€5,900)	(€4,581)
Developing:	TO	€54,548	€68,008	€56,947	€61,235
	FROM	(€65,750)	(€64,644)	(€75,124)	(€80,024)
	NET	(€11,201)	€3,363	(€18,178)	(€18,789)
Unclassified:	TO	€0	€0	€0	€0
	FROM	(€24,562)	(€22,464)	(€25,075)	(€26,146)
	NET	(€24,562)	(€22,464)	(€25,075)	(€26,146)
TOTAL		-	-	-	-

Appendix 6

Table 3: Adjusted Redistribution of Profits Using Formulary Apportionment: United Nations Country Classifications (EUR million)

Panel A

Jurisdiction		⅓*REV_TP + ⅓*EMP_NUM + ⅓*AST_TAN	½*REV_TP + ½*EMP_NUM	½*REV_TP + ½*AST_TAN	½*EMP_NUM + ½*AST_TAN
Developed:	TO	€147,811	€158,126	€168,771	€140,257
	FROM	(€116,620)	(€128,096)	(€117,923)	(€127,560)
	NET	€31,192	€30,031	€50,848	€12,697
In transition:	TO	€1,450	€1,515	€1,559	€2,711
	FROM	(€8,538)	(€12,297)	(€7,459)	(€7,292)
	NET	(€7,088)	(€10,782)	(€5,900)	(€4,581)
Developing:	TO	€44,398	€46,127	€34,265	€54,818
	FROM	(€43,940)	(€42,912)	(€54,138)	(€36,788)
	NET	€458	€3,215	(€19,872)	€18,030
Unclassified:	TO	€0	€0	€0	€0
	FROM	(€24,562)	(€22,464)	(€25,075)	(€26,146)
	NET	(€24,562)	(€22,464)	(€25,075)	(€26,146)
TOTAL		-	-	-	-

Panel B

Jurisdiction		⅓*REV_TP + ⅓*EMP_NUM + ⅓*AST_TAN	½*REV_TP + ½*EMP_NUM	½*REV_TP + ½*AST_TAN	½*EMP_NUM + ½*AST_TAN
Least developed:	TO	€6,820	€6,601	€6,593	€7,385
	FROM	(€5,575)	(€7,732)	(€4,706)	(€4,406)
	NET	€1,245	(€1,131)	€1,887	€2,979